Skin Anatomy

The skin is the primary barrier dividing the inside and outside of the body. It is divided into three layers, each with different functions and components.The outside layer is the epidermis, which consists of many different cell types. The primary cells are keratinocytes which are barrier cells and protect against damage from pathogens, heat, ultraviolet radiation, water loss, and other environmental conditions. The skin gets its color from melanocytes, which are found at the bottom of the epidermis and produce melanin. Dendritic cells are the third major group of epidermis cells. They act as messengers between the innate and active immune systems by presenting antigens from foreign cells for immune response. The fourth major group in the epidermis is the Merkel cells, which are associated with the sense of touch and discrimination of shapes and textures.The middle layer of the skin is the dermis, which is a thick layer of connective tissue that buffers stress and strain on the body. The sweat glands are located here and assist in the process of thermoregulation by secreting water which evaporates from the skin. Hair follicles have roots in the dermis layer and extend up to the surface of the skin. The hair and skin are lubricated and waterproofed by sebaceous glands, which release a waxy and oily substance onto the skin. The sebaceous glands are found mostly in the face and scalp, but are present everywhere except the palms and soles.The deepest layer of skin is the hypodermis, also known as the subcutaneous layer, which is filled with connective tissue that connects the skin to the skeleton. Adipose tissue is usually found in this layer.



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Characteristics

Epidermis
E-pick-deer
The epidermis is the outside layer of the skin, typically associated with preventing damage to the body.

Keratinocytes
Carrot-tin
Keratinocytes are barrier cells that protect the body from environmental damage. The damage can come from pathogens, UV radiation, heat, water loss and other external conditions.

Melanocytes
Melon
The skin gets its color from melanocytes, which are found at the bottom of the epidermis and produce melanin. Melanin also helps protect the body from UV radiation.

Dendritic Cells
Dreadlocks Cell
Dendritic cells are antigen-presenting immune cells located in the epidermis that activate the adaptive immune response.

Merkel Cells
Marker
Merkel cells are involved in the body's sensation to touch and determination of shapes and textures of objects.

Dermis
Deer-mouse
The dermis is the middle layer of the skin, which consists of connective tissue to reduce strain and stress on the body.

Sweat Glands
Sweaty Gland
Sweat glands are located in the dermis, and they secrete water to help the body decrease temperature during fever, exercise or stress.

Hair Follicles
Hair Follicles
Hair follicles are rooted in the dermis, but extend all the way up to the epidermis. Hair follicles assist in thermoregulation.

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Sebaceous Glands

Saber-fish

The sebaceous glands secrete a waxy and oily substance onto the hair and skin, which provides a waterproofing as well as a lubricant.

Hypodermis

Hippo-deer

The hypodermis is composed of connective tissue that attaches the skin to the skeleton. It is one of the locations of adipose tissue storage.

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